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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,415

10/05/2006

Takatoshi Sakata

F-9180

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JORDAN AND HAMBURG LLP  
122 EAST 42ND STREET  
SUITE 4000  
NEW YORK, NY 10168

EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

09/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,415	<b>Applicant(s)</b> SAKATA ET AL.	
	<b>Examiner</b> BURTON MULLINS	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 15 August 2006 has been considered by the examiner.

### ***Specification***

3. The disclosure is objected to because of the following informalities: Reference to specific claims on pp.6-7 must be removed.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakakibara et al. (US 7,156,623) and Nishiyama et al. (US 6,300,700). Sakakibara teaches an electric pump unit in which a pump section 11/15 for sucking and discharging a fluid is formed on one end side of a rotation shaft 31 disposed through a hole (bearing opening portion) 13a provided in an inner wall

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(bearing plate) 13 for dividing a housing (Fig.1), and a motor section 12 is formed on another end side of said rotation shaft, said motor section comprising: a rotor consisting of a rotor core (yoke) 32 and a permanent magnet 33 which are fixed to an outer circumference of said rotation shaft 31 (Fig.1; c.3:20-22); and a stator consisting of a stator core 35 with a coil 34 which are disposed in a periphery of said rotor (Fig.1). Sakakibara does not teach stator teeth or that the said permanent magnet constituting the rotor is embedded in said rotor core.

Nishiyama teaches a motor for a pump (i.e., compressor, c.7:8) comprising a rotor 3 consisting of a rotor core 13 and a permanent magnet 14 which are fixed to an outer circumference of a rotation shaft 4 (Fig.1); and a stator 2 consisting of a stator core 22 having a teeth portion 7, and a coil 24 which are disposed in a periphery of said rotor (Figs.1&4), wherein said permanent magnet 14 constituting said rotor is embedded in said rotor core 13 (Fig.1). The teeth and windings generate the rotating magnetic field while embedding the magnets in the rotor core utilizes not only the magnet torque but also the reluctance torque (c.4:20-25; c.1:26-28)

It would have been obvious to modify Sakakibara and provide stator teeth and an embedded magnet in the rotor core per Nishiyama to generate the rotating magnetic field and utilize reluctance torque.

6. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakakibara et al. (US 7,156,623) and Nishiyama et al. (US 6,300,700), further in view of Ota et al. (JP 2004-040917). Sakakibara and Nishiyama substantially teach applicant's invention but do not provide for a bearing gap between an outer-diameter face of the rotor core and an inner-diameter face of the stator core opposed thereto such that rotation of said rotation shaft is supported by said stator core.

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Ota teaches a motor comprising a stator core 11, a rotor shaft 12a and a rotor core 12 wherein a bearing gap (in which cylindrical bearing member 14 fits) is disposed between an outer-diameter face of the rotor core 11 and an inner-diameter face of the stator core 12 opposed thereto (Fig.1, abstract). The stator core functions as a bearing, supporting the rotation of the rotor 12 and rotation shaft 12a, thus reducing the size of the motor by shortening the axial length of the rotor (abstract).

It would have been obvious to modify Sakakibara and Nishiyama and provide a bearing gap between the stator core and rotor core per Ota since this would have been desirable to reduce the size of the motor.

Regarding claim 3, Nishiyama's stator core is an annular core having a cylindrical inner circumferential face ('slight gap' d is essentially zero, c.40-41); and a tooth portion protrudes from an outer circumferential face of said annular core in a radial direction (Fig.1).

Regarding claim 4, Ota teaches a solid lubricant coating film made of non-magnetic material such as grease or oil formed on the inner periphery surface of the cylindrical member 14 and thus on an inner-diameter face of the stator core 11 (abstract).

Regarding claim 5, Nishiyama's rotor comprises high permeability material of which laminated electromagnetic steel is a subset. Further, the examiner takes official notice that rare earth elements are notorious for use in rotor permanent magnets.

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***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BURTON MULLINS whose telephone number is (571)272-2029. The examiner can normally be reached on 9-5.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BURTON MULLINS/  
Primary Examiner, Art Unit 2834

bsm  
04 September 2008